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WHAT SIZE OF FARM IN THE YEARS AHEAD?

Discussion by Kenneth L. Bachman at the Joint Conference of Directors of Extension and Experiment Stations of the Southern States, College Station, Texas, April 12, 1956 1/

I would like to convey Dr. Johnson's sincere regrets that he is unable to attend this meeting. Until late last week, he planned to be here; then it became obvious that he would have to remain in Washington. Fortunately, he had prepared a draft of his talk which I am following closely in this discussion.

I shall divide my remarks into three parts:

(1) To review what has happened to the size of farm.
(2) To touch on why it has happened.
(3) To discuss the future prospects.

I suppose our concern with this problem is largely in terms of the future of the family farm and whether it can compete with larger scale operations that depend primarily on hired labor. But we are also very much concerned with problems of the small farm that has inadequate resources to produce a satisfactory income for a farm family.

The trend is in the direction of fewer farms as counted by the census, and also toward larger farms in the full-time farming group. Many people were shocked when the preliminary results of the 1954 farm census showed 600,000 fewer farms than in 1950. In the South, this decrease was accounted for to a considerable extent by the reduction in numbers of croppers which are included as farms in the census count. But there was also a decrease in other small farms. And for the Nation as a whole, the decrease occurred largely in the smaller farms.

The decrease in the number of farms has been the subject of much recent discussion. Columnists, radio and television commentators, and other writers and speakers have tried to interpret the meaning of the decrease in number of farms.

Some are worried about the survival of the family farm in an increasingly mechanized and highly complex agriculture. They also fear that if the family farm cannot survive, we will lose some of the cultural values associated with rural life.

Others say that the family farm as a business structure is outmoded. They argue that it should be replaced with more efficient types of farm business organization. A third group is confident that the family farm has a secure place in American agriculture. They believe that it can hold its own in competition with larger scale operations.

All three of these groups of interpreters cite statistics to prove their case. So, first of all, perhaps we need a little clarification of what we are talking about. We can do that partly by taking a quick look at the record. With that background, we can speculate more intelligently about the future. Fortunately, as a result of the cooperative work in recent years between the Production Economics

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Research Branch, ARS, and the Bureau of the Census, we do have a better picture of the sizes and classes of farms than we had a few years ago. The following classification of farms developed from census data provides a good starting point. 2/

Let's begin by dividing farms into two primary groups:

1. Commercial farms. These are places which provide a living from farming. They are primarily farming units.

2. Noncommercial farms. These are primarily places to live, with farming operations taking a secondary place. Although these units are primarily rural homes, enough farming is carried on--it does not need to be very much--to count them as farms in accordance with the census definition.

In the fall of 1954, the census count of farms totaled about 4.8 million. Of this total, about 3.1 million, or 65 percent of the total, have been classified as commercial farms. About 1.7 million, or 35 percent of the total, then fall in the class of noncommercial farms.

The noncommercial farms are in turn separated into two groups:

1. Part-time and residential farms: Those with sales of farm products under $2,500 and with the operator working off the farm 100 days or more, or nonfarm income of the farm family exceeding farm sales.

2. Subsistence farms. Those with sales of farm products under $250 but with operator working off the farm less than 100 days, and other income less than farm income even at this low level.

The rest of my discussion will be concerned largely with the commercial farms. As previously mentioned, in 1954, we had about 3 million commercial farms with sales of farm products ranging upward from $250. Nearly a million of these, or a third of the total, had gross farm sales under $2,500. They are small farms at present price levels. But the families on these farms are largely dependent on farming for a living.

Although this small farm group accounted for 32 percent of the commercial farms in 1954, it had only 5 percent of the total sales of farm products. Our small farm problem seems to be centered in this group of farms. More than half of them are in the Southern States.

At the other end of the scale, we had 134,000 farms with gross farm sales of $25,000 or more in 1954. Are these the so-called large-scale farms? They are all large farms, but because the classification is based on sales (volume of output), they include in recent years an increasing number of the larger farms which are operated largely with family labor. Many of these farms, however, are of larger scale than can be classified as family operations. Perhaps half of

2/ The 1954 census classification has been modified for this discussion to include as noncommercial farms those places with sales of $1,200 to $2,499 where the operator worked off the farm 100 days or more; to estimate the number of subsistence units, important especially in earlier years, and to adjust census numbers in these classes in earlier years for changes in the price of farm products. Some of the data used in this discussion are preliminary unpublished materials developed by J. V. McElveen, Production Economics Research Branch, ARS, and subject to later revision.

these farms employ the equivalent of 2 or more hired workers. All together, this large farm group constituted only about 4 percent of all commercial farms, but they accounted for about 30 percent of all farm sales in 1954.

Between these two extremes of small and large farms we have a big middle group of nearly 2 million farms, or about 64 percent of all the commercial farms. They range in gross farm sales from $2,500 to $24,999, and they accounted for about 60 percent of the total sales of farm products in 1954.

In the Southern States, the 1954 count of all farms was 2.3 million. 3/ About 1 million of this total were noncommercial farms. In the commercial farm group, those with sales of farm products from $250 to $2,499 included 566,000 farms. This is our small-farm group in the South. Our large-farm group included 35,000 farms. The group with farm sales of $2,500 to $24,999 included 690,000 farms. In the South then, there are about four-fifths as many small farms as there are in the middle group.

In considering numbers of southern farms, we must bear in mind that the count of 1.3 million commercial farms includes sharecropper units as farms. If we make a rough adjustment for the sharecropper units included in the commercial group, we come out with 1.1 million commercial farms.

We shall now take a brief look at what has happened to the different classes of commercial farms over the last quarter century. Research workers in Production Economics have made a comparison of the number of farms producing these same quantities of farm products for sale in previous census years. This involves adjusting the "value of sales" limits in earlier years for changes in farm prices. By making such adjustments, they get the following results which can be summarized both for the United States as a whole and for the South:

1. The large-scale farms (those with a volume of farm sales equal to $25,000 or more with farm prices at 1954 levels) have tripled in number since 1929.

2. There has been some increase in the number of farms with a volume of sales of farm products $2,500 to $24,999. This increase is mostly in the larger farms in this group.

3. In 1954 there were only about a third as many farms with a volume of sales of $250 to $2,499 as in 1929.

The reduction in number of farms over the last 25 years appears to be concentrated in the small farm group. But I want to call your attention to the fact that these changes are in terms of volume of products sold. Farm output per worker in 1954 was 2-1/3 times as great as in 1929. As technological advances made it possible for each worker to produce more, the commercial farms grew bigger in terms of physical output. They also have increased the number of acres operated, the amount of livestock and equipment per farm, and the purchases of nonfarm materials and supplies for current operation. Average acreage per farm is 1-2/3 times that of 1929, and other capital has increased even more. In other words, land and other capital was substituted for labor on commercial farms. The result is a larger output per farm and per worker. Although there are fewer commercial farms, some of the small farms of 1929 have graduated into the middle-size groups by increasing output per farm.

3/ West Virginia, Delaware, and Maryland are included in the census group of Southern States.

The increase in size in terms of volume of output sold has not, however, meant a similar reduction in the size of the low-income farm problem. A considerable part of this increase in size of business has involved increased expenses for items such as machinery, gasoline, and fertilizer. There has been some reduction in the size of the low-income farm problem, but it has been considerably slower. In terms of dollars of constant purchasing power, the number of farm families with net money incomes under $1,000 dropped only from 1.7 to 1.6 million in the 6-year period from 1948 to 1954. 4/

When we consider the changes in large farms, our concern immediately relates to how these changes are affecting our family farm structure in agriculture. In general terms, we can be pretty clear that up to the end of World War II the trend in farming was away from large farm organizations employing substantial numbers of workers. Mechanization in wheat and corn areas, for example, gave an impetus to reduced dependence on hired labor. During the war, workers simply were not available in many cases. Since the war, the general direction has been somewhat less clear. In the South there has been a slight increase in hired workers as a percentage of the total labor force. If, however, croppers are considered as hired workers instead of farm operators, the general movement would certainly still be in the direction of fewer farms which are primarily dependent on hired labor.

In the Southern States, the reduction of 909,000 commercial farms since 1929 can be accounted for largely by (a) the smaller number of sharecroppers, and (b) relatively more part-time farms. The number of sharecroppers dropped from 776,000 in 1929 to 273,000 in 1954--a reduction of a half million. The number of part-time and residential farms, on the other hand, increased by 309,000.

What is the meaning of these changes over a quarter of a century? Do they have implications for the future? Do they give us any clue as to the chances of survival of the family farm? The record seems to indicate that the chances for survival of the small full-time commercial farms are gray, if not dark. The larger commercial family farms are holding their own quite well, however.

But before we struggle with the question of size of farm in the years ahead we perhaps need to consider some basic reasons for the trends during the past quarter century. Of first importance undoubtedly has been the rising standards of living in our economy generally. This has provided an incentive for mechanizing and for higher incomes in agriculture as well as affording alternative employment opportunities for those preferring other occupations.

Equally basic has been the availability of technological innovations which increased output per worker. Especially significant to the family farm were the mechanical inventions which encouraged replacement of labor with capital. Many larger farms found they could reduce their hired labor considerably when they shifted to tractor operations and bought a combine, a cornpicker, or a milking machine. In the South, increases in size of farms have been encouraged by the pull of sharecroppers leaving the area or engaging in other occupations.

4/ Characteristics of the Low Income Population and Related Federal Programs. Joint Committee Print, 84th Congress, 1st Session, Washington, 1955.

Looking ahead, we can only point to some of the aspects that may become important. I would like to touch on some of these:

(1) Opportunities for employment. We cannot overemphasize the fact that agriculture is each year becoming more closely tied to our general economy. Size of farm is no exception. Opportunities for farm enlargement will be closely related to employment conditions in nonfarm occupations.

(2) Type of technological development. Some people feel that during the coming 25 years biological innovations may be more important than mechanical. Will these provide more opportunities for development on small farms? Will this encourage family farm operation? Or, will irrigation and other intensification of production in some cases materially reduce the problems of supervising several hired farm workers?

(3) In the South, changes in size of farms will increasingly involve ownership aspects. With only 200,000 cropper units classed as commercial farms, further reduction will not be as large a factor over the next quarter of a century as it was in the past quarter century.

(4) Institutions. Looking backward, we see that our society has from time to time taken steps that have affected our organization of agriculture. The Homestead Act, for example, undoubtedly had far-reaching effects even on our present organization of agriculture.

Perhaps in this context we need to think through some of our basic value judgments with respect to rural life.

Some people would say that the opportunity for relatively large numbers of people to live on the farm should be valued so highly in terms of national welfare that we should strive to maintain a large farm population even if that means small farms cultivated largely with hand labor. This is an extreme agrarian view. It is usually presented without considering the income and living consequences to farmers.

If this alternative were to be taken seriously, it would require some basic decisions that could be made only by farm people themselves. Unless farmers were very heavily subsidized, it would mean that farming would become a "mode of life." Small labor-intensive farms would furnish subsistence, but income would not be sufficient to provide automobiles, electricity, telephones, television, movies, or other contacts with nonfarm groups. The basic question then is whether farm people want to become a group apart from the rest of society, or whether, given an opportunity, they want the same material things and the same social contacts as city people do.

The trend, over the last quarter century at least, has been toward fewer and larger farms, and away from what might be termed a peasant agriculture. This trend appears to have been accelerated by research, extension, and other programs.

If we as a Nation were convinced that the cultural values of farm life were of paramount importance, we would face a dilemma. For to subsidize farmers on small farms to the extent needed to provide sufficient income to give them equal purchasing power with other groups would not be consistent with other cherished values of rural life, such as the spirit of independence, equality, and making our own way.

The mere mention of such a reversal of trends is enough to make us consider other alternatives. What are these alternatives? Is it possible for more of our present operators of small farms to combine rural living with nonfarm work and in that way get much of the advantage of farm life? This would mean a further increase in part-time and residential or noncommercial farms. Is it also possible to provide better opportunities for a part of the operators of small farms to graduate into the middle group of commercial farms?

This raises another, and perhaps even larger question, namely, whether the large middle group of present family-operated farms can pay its way and provide a level of living comparable to other occupations. Experience during the present transition period indicates that unless we can expect the gradual emergence of a more favorable environment for agriculture, most farmers will encounter income difficulties. But to get into the farm adjustment and income problems of the transition years would take us too far away from our present topic.

Fortunately, the prospect of achieving a better balance between output and markets may be brighter as we look farther ahead. Under such conditions, how large would a full-time farm have to be to pay its way and provide a living comparable with other occupational groups in return for the same effort, skill, and managerial ability?

There are two ways to get at this question. One is to consider the size of farm that can be handled with modern equipment by the labor available in the typical farm family, with hired or exchange work in peak seasons, and then to determine whether a farm of this size will provide equality of income and living for the farm family.

The other way is the efficient farming approach. The latter involves determining the size of farm that is needed to attain a standard of operating efficiency that can compete with larger scale farms. The question then becomes whether the family farm can be operated efficiently enough to compete successfully with larger operations.

Perhaps the following might be considered as a desirable goal for a family farm: Large enough to (a) achieve a standard of operating efficiency that can compete with larger scale farms for use of farm resources, (b) pay operating expenses and maintain the farm plant, (c) provide equality of living for the farm family. In suggesting this standard for a family farm, no attempt is made to arrive at the number of acres or other inputs, or at any measure of gross output. Both inputs and gross output would vary a great deal among types of farms and farming areas.

When we have said all this and consider that all of the small farms sold less than $2,500 worth of products in 1954 and that 1½ million farmers had net money incomes under $1,000, we discover a very considerable gap between the actual and the desirable. We also have to admit that many farmers in that group do not have a land base or other farm resources sufficient to produce enough products to achieve the standard that has been outlined.

Without minimizing the need and the opportunity for closing a large part of this gap, we should recognize that some of the small farms are furnishing a better living than people on those farms can obtain elsewhere. In other words, those farms represent the best income opportunity for those who are now operating them.

The question then becomes one of what measures can be taken to improve conditions on small farms for the present generation of farmers, and to provide opportunities for the young people growing up on those farms to seek and obtain better incomes. Here is a research and extension challenge. Can we develop more profitable systems of farming for people who find themselves in these situations? Are we giving full attention to the possibilities and problems in our growing area of part-time and residential farming?

I have delayed answering the question "What size of farm in the years ahead?" I could attempt a balancing of opposing forces. Most of them seem to be pulling in the direction of larger commercial farms. Some forces are pulling toward large-scale farming, but other forces continue to favor sizes of farms that are operated largely with family labor. Such an attempt to balance the forces operating on the size of farm would involve a prediction of what farm people, the general public, and we, as research and extension workers, choose to do about directing these forces.

The forces, for example, that have pulled in the direction of large units employing substantial number of workers are not fixed immutably as the laws of nature. Most of the forces that affect farm size are man-made forces, operating through man-made institutions. They are, therefore, subject to human choices, and they can be modified by human effort. The more important ones are: (1) Technological developments, which are the product of research and discovery, and are adopted by farmers through extension and other programs; (2) the economic and social environment which results from the collective action of individual, institutional, and governmental activities.

This audience has considerable responsibility for technological developments and their adaptation for maximum benefit to farm people. Barring war or other catastrophe, the economic environment is subject to orderly modification. Legal institutions which affect tenure, credit, farm programs, and other phases of the economic and social environment also can be modified and improved.

The question, therefore, seems to resolve itself, at least partly, into deciding on the goals we wish to achieve. What sizes of farms, and what kind of a rural society would best promote the interests of farm people as well as the general public? It is not up to us as researchers and extension workers to establish the goals, but we do have some responsibility for analyzing alternatives and providing opportunity for discussion of the advantages and disadvantages of each.

One primary goal has already been mentioned, namely, equality of economic opportunity. This involves a rural environment in which all farm people have an opportunity to earn real incomes equal to those available in other occupations for the same effort, skill, and managerial ability. It also involves an opportunity for children on farms to grow up in an environment conducive to development of the full potentialities of each individual.

In this context, we must not forget that those who are likely to find their best economic opportunity in farming will continue to differ greatly in training, managerial and technical skills, and personal preferences. There is likely to be continuing need, therefore, for a complete array of sizes and types of farms to fit varying abilities and situations of farm people.

If goals such as these are what farm people desire, what can research and extension workers do to help achieve them? Perhaps we would say that we are doing all that we can do now. Our research is available to all comers. But is that enough? Research results usually are most readily understood and adopted by operators of the larger farms. Do they have to be? Could more research be geared to the problems of the smaller farms, or at least to the middle group? Can they be presented so that they have more specific application to those who need our help the most? Can some new approaches be developed to improve our job in low-income areas?

What about research to appraise the potential impacts of new development, and to help those disadvantaged by technological and other changes to adjust to the prospective situation? Such problems require research in farm management, farm financial, tenure and labor problems, taxes, insurance, etc. What percentage of our research resources is going into studies of this kind? And how much of our extension effort is devoted to these problems?

There is little evidence at the present time that the efficient family farm cannot survive in competition with large-scale farms. This statement assumes that family farms are large enough to use improved equipment and techniques effectively. But sufficient facts simply are not available. We need some thoroughgoing studies of economy of scale in different farming areas.

If substantial advantage in efficiency is possible with large-scale units, we need to know this. For in this case, the alternative may involve either some subsidization to maintain incomes, or we may reconcile ourselves to such a trend and seek to remove some of the social disadvantages of a hired labor class in agriculture in much the same way that we have moved in nonfarm occupations.

We also need studies to determine how young people with aptitude for farming, and interested in it as a career, can get started on efficient family farms. Will the high investment required for a farm of efficient size constitute a barrier to farming except for those who inherit farms? Will farming then become a hereditary occupation, as it is now in some countries? If that happens, will it tend to slow down agricultural progress? What can or should be done to make the entry into farming on a sound and satisfactory basis easier for young people who are interested in farming, but who cannot obtain assistance from relatives?

At the present time, there seems to be a tendency toward greater integration of production, financing, and marketing functions. This tendency is most evident in some of the fruits and vegetables and in broiler production. Many of our large-scale farms are now found in this type of situation. These developments may exert a pull in the direction of larger farms in order to retain producer bargaining power and management responsibility. Or with other arrangements they can bring some of the advantages of technical efficiency to small operations. Here is an opportunity to examine the competitive advantage of such integration, and whether the advantage, if any, can be achieved in other ways. Perhaps the experience of Holland and Denmark over the past two centuries have some application here. What about cooperative financing, marketing and purchase of farm supplies?

The best I can say from present evidence is that apparently we could have a pattern of commercial farms in the future in which the predominant group would consist of owner-operated family farms of adequate size to provide opportunity for equality of income and living. We also could move toward more large-scale farming, especially if through our evolving institutions we tip the scales of farm programs and other economic aids in that direction.

Alternative choices seem to be open. We should not drift blindly in either direction. Research and extension workers do have a responsibility to analyze the alternatives and to help achieve the goals that are the product of intelligent choice by farm people and the general public.

Table 1.- Number and percentage of farms by economic class, United States and South, 1954

Economic class of farm	Gross value of sales intervals	United States		South	
		Number	Percent of all farms	Number	Percent of all farms
		Thousands		Thousands	
All farms		4,782	100.0	2,317	100.0
Commercial farms 1/		3,095	64.7	1,291	55.7
Class I	$25,000 and over	134	2.8	35	1.5
Class II, III and IV	$2,500-24,999	1,969	41.2	690	29.8
Class V and VI 1/	$250-2,499	992	20.7	566	24.4
Noncommercial 1/	Under $250	1,687	35.3	1,026	44.3
Part-time and residential 1/	Under $2,500	1,512	31.6	898	38.8
Subsistence	Under $250	175	3.7	128	5.5

1/ Farms with sales of $250 to $2,499 were classified as part-time and those with sales of under $250 as residential if the farm operator worked off-farm as much as 100 days or the other income of the operator and family members exceeded sales from the farm.

Table 2.- Estimated number of commercial farms on the basis of management units, United States and major regions, 1929-54

United States and major regions	Number of farms 1/				
	1929	1939	1944	1949	1954
	Millions	Millions	Millions	Millions	Millions
mmercial farms: 2/					
United States	3.9	3.6	3.5	3.2	2.9
North and West	2.4	2.2	2.1	2.0	1.8
South	1.5	1.4	1.4	1.2	1.1

1/ Adjusted to a management unit basis by estimating commercial farms exclusive cropper units in the South.

2/ All farms (excluding croppers) with sales of $2,500 or more and those with les of $250-2,500, provided the farm operator did not work off farm as much as 0 days and farm sales were less than other income received by the family from f-farm sources.

The value intervals were adjusted to take account of changes in prices received r farmers. Value is expressed in terms of 1954 prices for farm commodities.

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